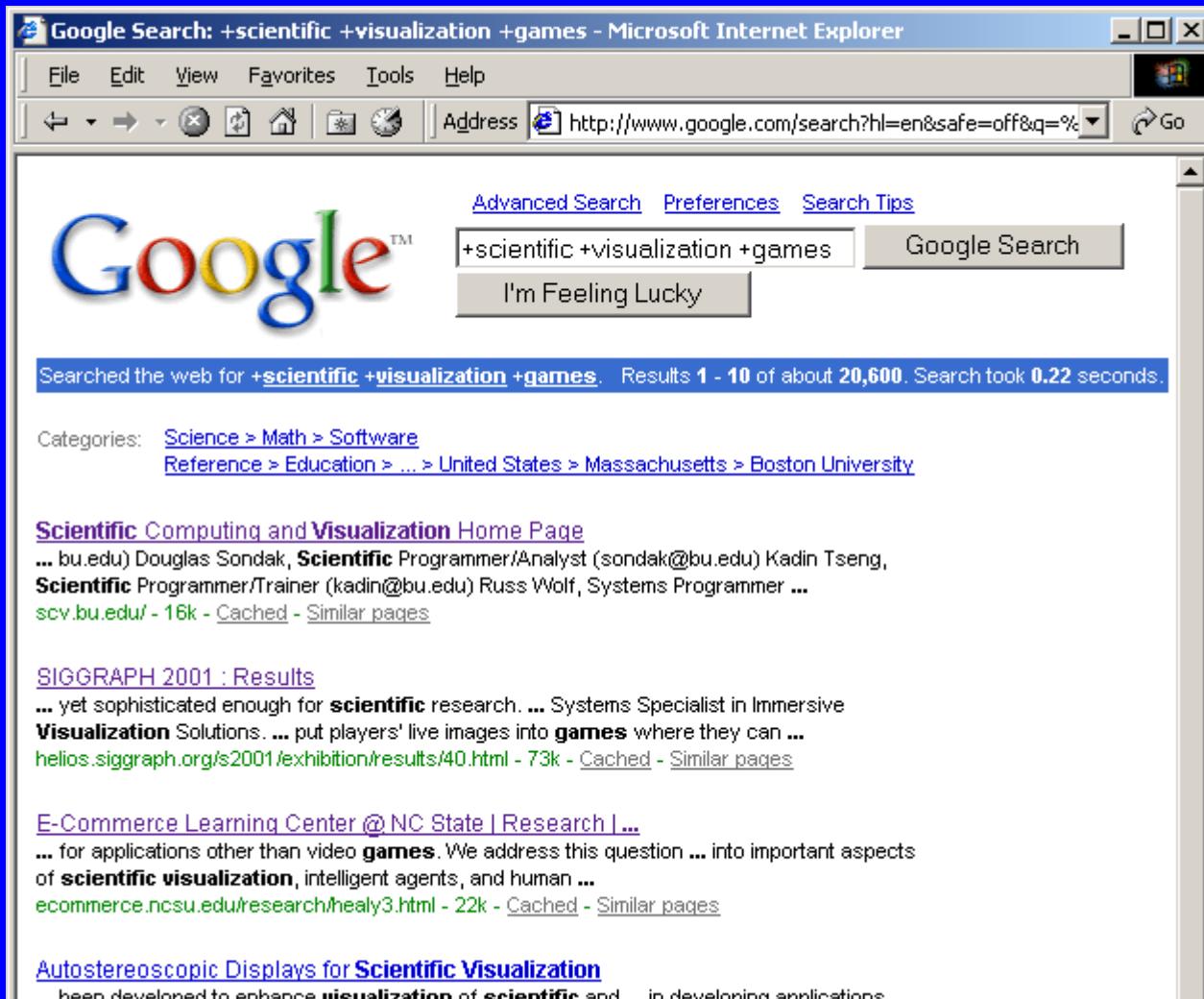


Games and Viz

(as opposed to Viz and Games)

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Is there anything out there now?

A screenshot of a Microsoft Internet Explorer window. The title bar says "Google Search: +scientific +visualization +games - Microsoft Internet Explorer". The address bar shows "http://www.google.com/search?hl=en&safe=off&q=%20scientific%20visualization%20games". The search bar contains the query "+scientific +visualization +games". Below the search bar are buttons for "Google Search" and "I'm Feeling Lucky". The main content area shows search results for "Scientific Computing and Visualization Home Page", "SIGGRAPH 2001 : Results", "E-Commerce Learning Center @ NC State | Research | ...", and "Autostereoscopic Displays for Scientific Visualization". Each result includes a snippet of text and links for "Cached" and "Similar pages".

Google Search: +scientific +visualization +games - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.google.com/search?hl=en&safe=off&q=%20scientific%20visualization%20games

Advanced Search Preferences Search Tips

+scientific +visualization +games Google Search

I'm Feeling Lucky

Searched the web for **+scientific +visualization +games**. Results **1 - 10** of about **20,600**. Search took **0.22** seconds.

Categories: [Science > Math > Software](#)
[Reference > Education > ... > United States > Massachusetts > Boston University](#)

[Scientific Computing and Visualization Home Page](#)
... bu.edu) Douglas Sondak, **Scientific** Programmer/Analyst (sondak@bu.edu) Kadin Tseng, **Scientific** Programmer/Trainer (kadin@bu.edu) Russ Wolf, Systems Programmer ...
[scv.bu.edu/](#) - 16k - [Cached](#) - [Similar pages](#)

[SIGGRAPH 2001 : Results](#)
... yet sophisticated enough for **scientific** research. ... Systems Specialist in Immersive **Visualization** Solutions. ... put players' live images into **games** where they can ...
[helios.siggraph.org/s2001/exhibition/results/40.html](#) - 73k - [Cached](#) - [Similar pages](#)

[E-Commerce Learning Center @ NC State | Research | ...](#)
... for applications other than video **games**. We address this question ... into important aspects of **scientific visualization**, intelligent agents, and human ...
[ecommerce.ncsu.edu/research/healy3.html](#) - 22k - [Cached](#) - [Similar pages](#)

[Autostereoscopic Displays for Scientific Visualization](#)
... been developed to enhance **visualization** of **scientific** and ... in developing applications.

Two Ways To Slice It

- How SciViz is affected by Games
 - The major focus of this panel
 - Briefly mention one issue
- How Games are affected by SciViz
 - in User Interfaces
 - HUDs, maps, power meters, graphs
 - during development
 - debugging, generating, testing

SciViz versus Games

- Do game requirements differ from viz requirements, especially for 3D HW?
 - Microsoft thought/marketed this with early D3D
 - not true then, or now
- High end game developers want:
 - high precision & high dynamic range pixels & pipelines, subpixel/texel accuracy, FSAA, etc.

Games and Viz User Interface

- viz, CHI, cartography, etc.
- “lots” of data to display
 - multiple dimensions of continuous/discrete data
 - strength, health, mana, units, etc.
 - equipment, location
 - overlays and HUDs
 - automap, targeting, information, etc.
 - views of data
 - occlusion, removal & transparency
 - relationships between characters

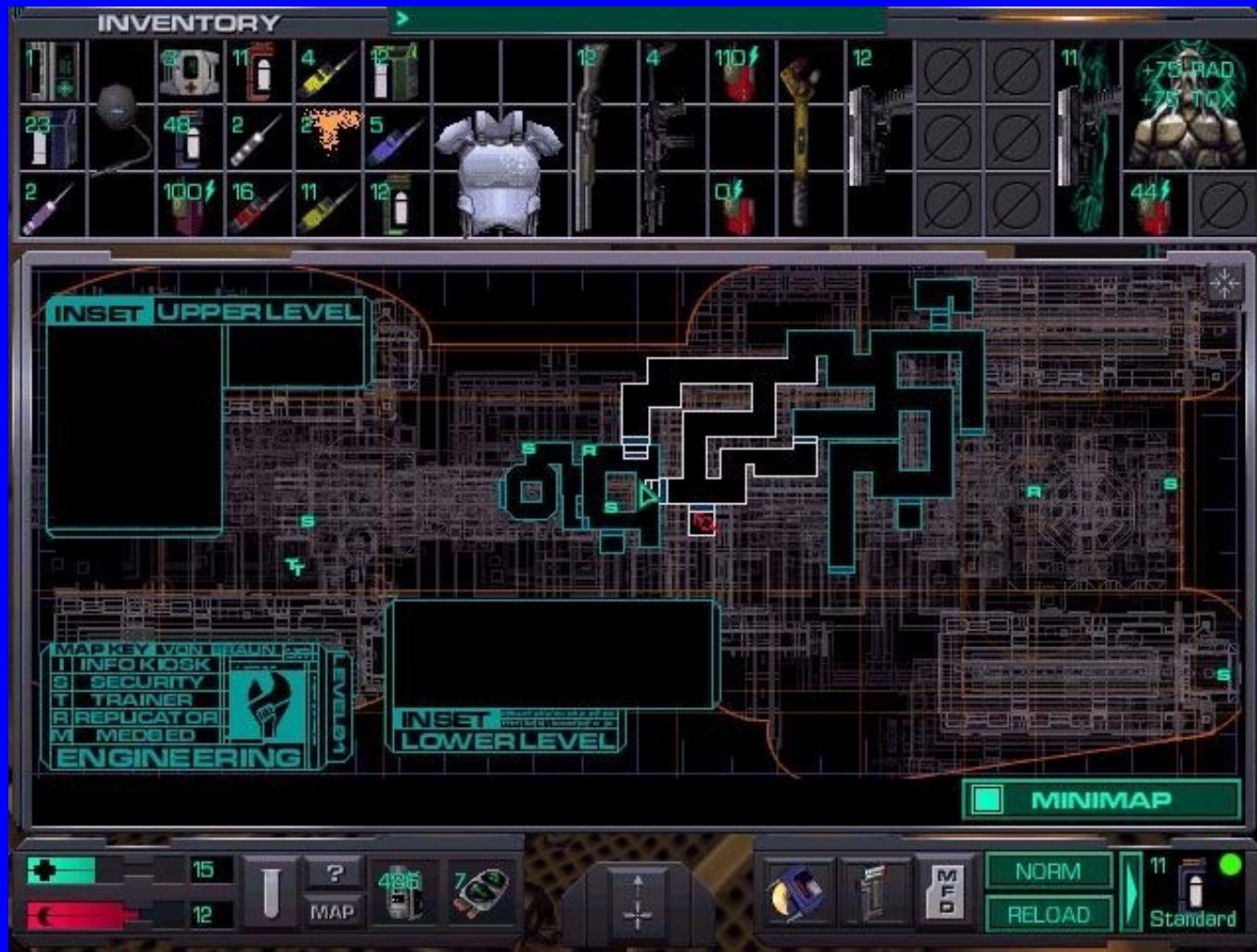
Automap, Overlay, Health, etc.



Occlusion and Transparency



Maps, Inventory, Stats



Games and Viz

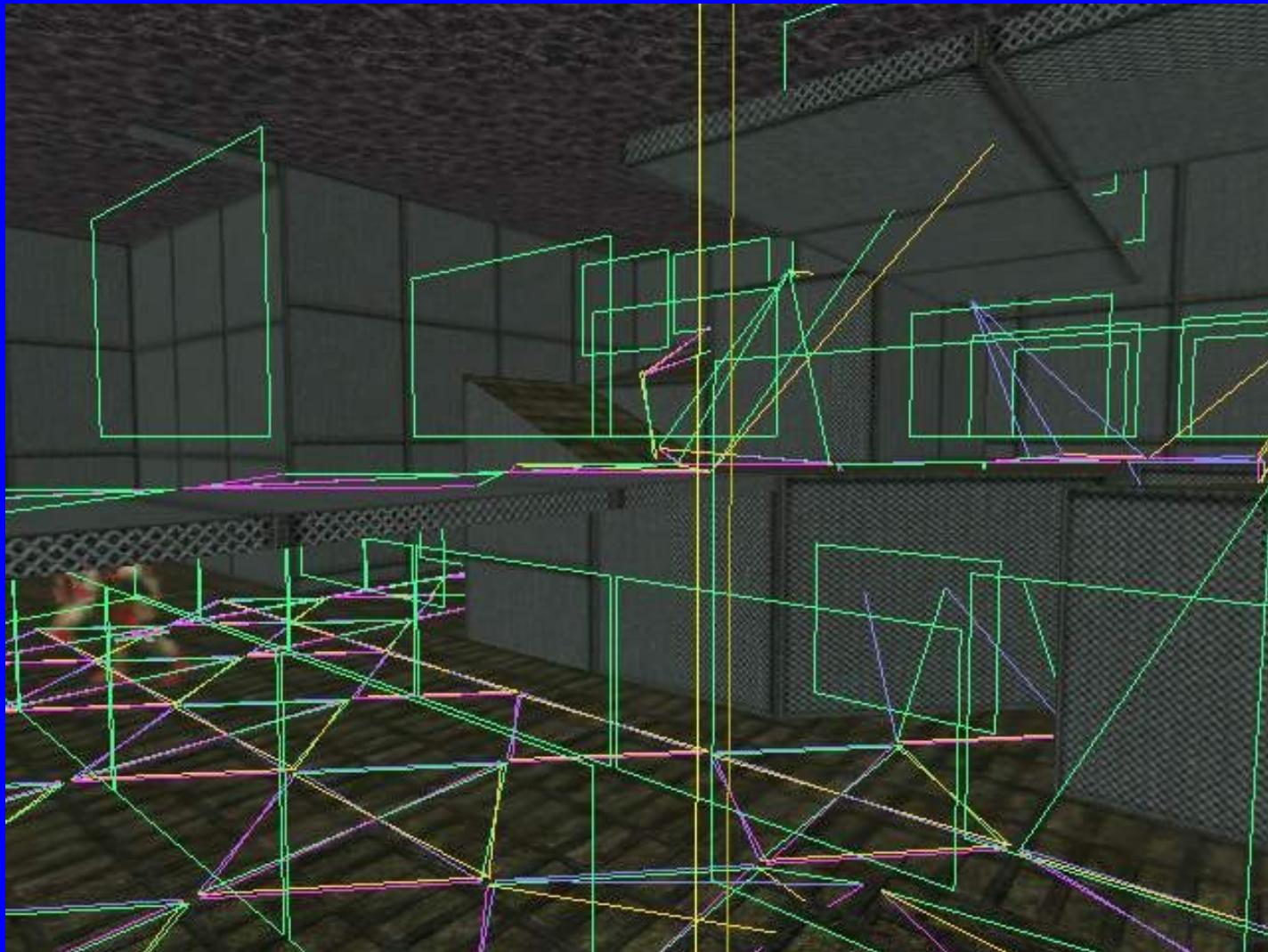
Viz as Development Tool

- debugging, generating, testing
- mostly fumbling around, doing the obvious thing
 - drawing lines, using colors, maybe graphs
 - sometimes realtime, sometimes offline

Debugging



Debugging with Graphics!



Demos

- in-game debugging HUD graphs for time varying variables
- standalone viz app for understanding and developing math for a game

Conclusions

- Games definitely affect Scientific Visualization
- Viz could have direct impact on games, especially on development
 - outreach from viz community with concrete improvements would be welcome
 - not much awareness of viz as relevant
 - ad hoc or general solutions? general guidelines
 - not “large” datasets by viz standards